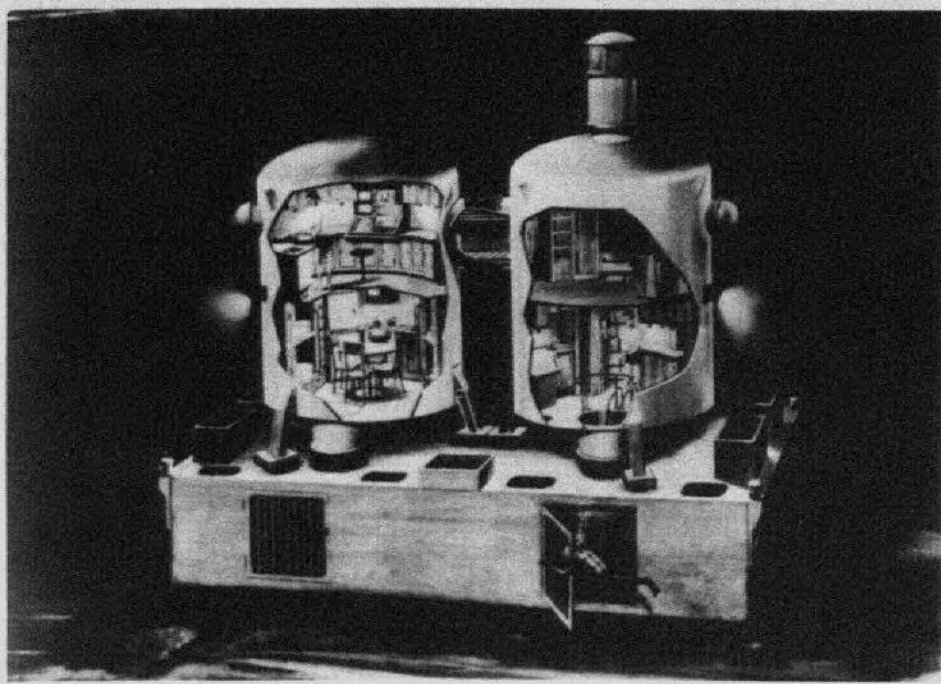




# the astrogram

VOLUME XII  
NUMBER 17  
July 2, 1970

National Aeronautics and Space Administration • Ames Research Center, Moffett Field, California



**TEKTITE II HABITAT** - Teams comprising scientist-aquanuts and engineers are spending periods ranging from two weeks to 30 days in this four-chamber, General Electric built habitat in this year's Tektite II program. Placed at a depth of 50 feet off Great Lameshur Bay, St. John Island, U.S. Virgin Islands, the Tektite II habitat is serving as home and laboratory for several crews participating in the program. Charles C. Kubakawa, Man-Machine Entegration Branch, recently completed 30 days as engineer in Tektite II.

## Ames Scientist Ends 30-day Tektite II Habitat Mission

Charles C. Kubokawa, a human factors engineer in the Man-Machine Integration Branch at Ames, recently completed 30 days as habitat engineer in Tektite II, an underwater research program in which five-man crews are living and working on the ocean floor.

The Tektite II habitat is anchored 50 feet below the surface of Great Lameshur Bay on the south side of St. John Island in the Virgin Islands.

Seventeen missions are planned during the seven-month test program of Tektite II. Ten at 50 feet and seven at 100 feet. Overlapping stays for certain engineers mean that some crew members remain underwater for up to 30 days, as did Mr. Kubokawa.

While scientist and engineer aquanuts conduct their undersea research from the habitat on the ocean floor, they are observed via closed-circuit communication by behavioral and biomedical teams on the surface. The observations will contribute to man's knowledge of the psychological and physiological factors associated with missions performed in an isolated, hostile environment such as manned undersea and space missions.

The five-man habitat is an under-

water research laboratory, complete with living quarters and all necessary furniture, plumbing and other support equipment. It consists of two 18-foot-high steel cylinders, each 12 1/2 feet in diameter, connected by a tunnel 4 1/2 feet in diameter. The two main cylinders sit on a box-like structure which is ballasted with scrap iron to keep the habitat submerged.

During a press conference held at the Center after Mr. Kubokawa's return, he talked about his month-long stay in the habitat. He believes it is a great research substitute for testing the habitability of confined living quarters in space--however, he thinks astronauts have far better life support systems. His job was to evaluate the relationship between the scientists and their equipment and its relevance to lengthy stays in space.

He observed that the ECS (environmental control system) was hard to maintain because of its compactness. He also said, "NASA would have been more critical of such a system in space. A backup system would have been provided to function while initial systems were being repaired."

The project was of special interest to Mr. Kubokawa because, as he

## Harper Named to Post at Ames

Charles W. Harper, internationally-known authority on simulation and aircraft flight research, has been appointed Special Assistant to the Director for Interagency Affairs at Ames Research Center.

In this new position Mr. Harper will serve as liaison for aeronautical research and development matters between Ames and the governmental agencies, industries and educational institutions with which the Center has working relationships.

Mr. Harper left Ames in October 1964 to become NASA Director of Aeronautical Research in Washington, D.C. Three years ago he was elevated to his present position as Deputy Associate Administrator for Aeronautics.

Appointment to the newly-created position at Ames was effective July 1.

Mr. Harper first joined the Ames



staff in 1941 immediately after graduation from the University of California, Berkeley, with a degree in Mechanical Engineering (aeronautics option).

During World War II, Mr. Harper specialized in low-speed flight problems and in later years did extensive work on low-speed aircraft. His research achievements include boundary layer control, flight simulation and supersonic design concepts.

Before transferring to NASA Headquarters Mr. Harper was Chief of the Full-Scale and Systems Research Division at Ames.

Born in Winnipeg, Manitoba, Mr. Harper became a United States Citizen in 1941.

## New Heat Shield for Space Shuttle

Metal shielding that would protect a reusable space vehicle from intense heat as it re-enters the Earth's atmosphere is being studied by materials scientists at NASA's Lewis Research Center.

The heat shield is for the proposed space shuttle planned for ferrying men and cargo between the Earth and Earth orbit. Still on the drawing boards, the shuttle is envisioned as a two-stage workhorse system consisting of a booster and an orbiter. Each stage will return to Earth to land and be reused. Materials studies at Lewis focus on shielding for the orbiter which must withstand temperatures of up to 3,000 degrees Fahrenheit during re-entry. At that point the orbiter is traveling more than 17,000 miles an hour.

(Continued on Page 4)



## Pollution Sensor Openings for Youth in Ames Explorer Posts

As a part of the national attack on the problem of atmosphere pollution, the NASA's Langley Research Center has begun development of a space-borne sensor for carbon monoxide.

A Langley contract to prepare a flight experiment based on an advanced type of sensor for measuring carbon monoxide concentrations has been awarded to G.E.'s Space Division. The 30-month effort is valued at \$1,077,000.

Scientists estimate that the Earth's atmosphere contains about 500 million tons of carbon monoxide. Each year, automobile exhausts, industrial activities and other sources generate some 200 million tons of carbon monoxide.

However, measurements over a period of years indicate that the total concentration of carbon monoxide in the atmosphere is apparently not increasing despite the huge quantities added every year, a fact which implies that there must be some natural mechanism for removing most of the gas as it is generated.

G.E.'s proposed experiment is based on an instrument known as a correlation interferometer being developed by Barringer Research, Ltd., of Toronto, Canada. The interferometer is an optical device capable of detecting very small amounts of gas constituents.

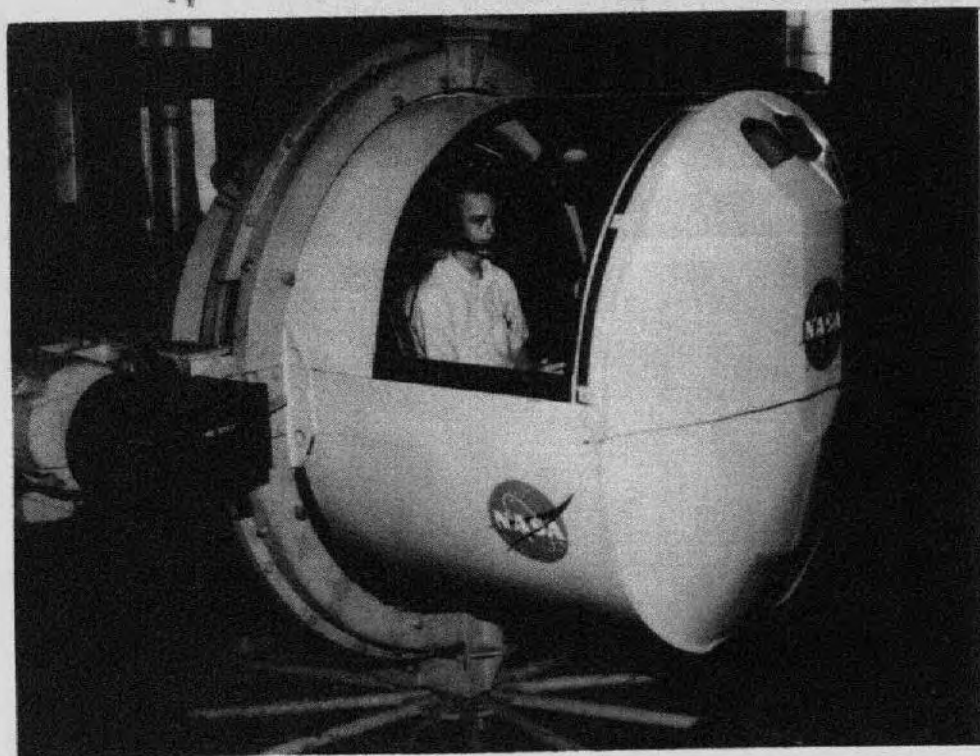
The Ames Astronautics and Aeronautics Explorer Posts are now enrolling young men and women for this year's program.

Bill Page, advisor of the Astronautics Post, and John Habermeyer, advisor of the Aeronautics Post, state: "We are going to have an interesting and exciting group of projects this coming year. A limited number of openings are available for young people between 14-17 years of age interested in science. We would like to make relatives and friends of Ames employees aware of this annual opportunity to join one of these posts."

Last year the Astronautics Post was involved in wind tunnel investigations, electronics, lunar geology, and aircraft and spacecraft simulation programs. They meet every other Thursday at Ames from 7:30 p.m. to 9 p.m.

The Aeronautics Post will continue to enroll participants in the Palo Alto Unified School District's 'Commercial Pilots Ground School Training Course' which meets 7-10 p.m. each Tuesday and Thursday evening September through April. Briefings at Ames and social get-togethers will complement the course.

Call Garth Hull ext. 2785 if you are interested.



ASTRONAUTICS EXPLORER . . . Jon Wood, Ames Astronautics Explorer Post #12, is pictured operating the Ames Six-Degree-of-Freedom Motion Simulator. Posts #12 and #17, sponsored by the Center for young people interested in Astronautics and Aeronautics, are in the Stanford Area Council, Palo Alto, but are open to applicants from outside the Council area.

## Two AIAA National Conferences Held

Two interesting and relevant national conferences sponsored by the American Institute of Aeronautics and Astronautics (AIAA) were held concurrently at the International Hotel in Los Angeles June 29 through July 1.

The "Fifth Thermophysics Conference" continued the series by assembling specialists from industry, government, and universities to discuss a variety of scientific and engineering aspects of thermophysics; and the "Third Fluid and Plasma Dynamics Conference" had been organized to provide a balance of technologies, current applications and emerging disciplines of interest to the fluid and plasma dynamicists.

Several members of the Ames research staff were participants in the "Third Fluid and Plasma Dynamics Conference" which was under the General and Technical Chairmanship of Dr. Walter Warren, Aerospace Corporation. C. Frederick Hansen, Chief of the Fluid Mechanics Branch, and John T. Howe, Thermal Protection Branch, both served on the Technical Program Committee. Mr. Hansen was chairman of the session on High-Energy Flow Phenomena, and Mr. Howe chaired the Biofluid Mechanics session.

At the conference on fluid and plasma dynamics, sessions were included which were directed to problem areas of important social concern-- Biofluid Mechanics

and Fluid Physics of Pollution a new departure for this conference. One session was organized to explore aerodynamic problems related to space shuttle or space transportation systems. Another important area discussed was the production of controlled thermonuclear reactions through plasma heating and confinement methods. The use of lasers for plasma production was also included in the discussions.

### AMES PAPERS

Papers presented by Ames research scientists were: "Fluctuation and Transition Measurements in Compressible Boundary Layers", by Dr. F. Kevin Owen, a Post Doctoral Research Associate; "Crosshatched Ablation Patterns in Teflon", by Philip R. Nachtsheim, Assistant Chief, and Howard K. Larson, Chief, Thermal Protection Branch; and "A Method for Computing the Nonequilibrium Radiant Emissions from Near Equilibrium Shock Layers", by Gene P. Menees, Fluid Mechanics Branch.



SAVINGS BOND WINNERS . . . receive congratulations and their reward for participating in the 1970 Bond Drive from Ames Acting Director C.A. Syvertson (left). Marcelline Smith, Campaign Chairman, reports an increase in the Center's participation rate from 53 percent to approximately 63 percent. This was made possible because of the hard work and support of the many canvassers and solicitors from throughout the Center. Mrs. Smith extends her personal thanks for all their efforts. The pleased bond winners pictured here are (l to r) James E. Johnston, Mechanical Instrument Branch, \$50 bond; Natalie Bossio, Computation Division, \$25 bond; James H. Gooch, Mechanical Services, \$100 and William R. Logan, Jr., Contract Management, \$25. An additional winner not pictured, David D. Few, Project Biosatellite, \$50.

**The Astrogram** Room 134  
Admin. Mgt. Building  
Phone 2385

The Astrogram is an official publication of the Ames Research Center, National Aeronautics and Space Administration, Moffett Field, California, and is published bi-weekly in the interest of Ames employees.

Editor . . . . . Dot Evans  
Reporters . . . . . NASA Employees

Deadline for contributions:  
Thursday between publication dates



## Merit Promotion VACANCY NOTICE

Position: Supervisory Engineering Technician (GS-11)

Location: Magnetoplasmadynamics Branch

Area of Consideration: Astronautics Directorate.

How to Apply: Telephone Employment Branch, ext. 2021, by July 17, 1970.

Further details of this opportunity are posted on all Center bulletin boards.

## Retiree Reception

The Third Retiree Reception held June 12 in the Ames Cafeteria was an occasion to remember as the Center paid tribute to the forty-four employees who retired during the month of June.

Sponsored by the ARA (Ames Recreation Association) the affair brought together well over 500 employees who extended best wishes to the honored guests.

Committee chairman Harry De Voto had a hard-working team which effectively carried out all assigned details. Congratulations to the following committee members for a job well-done: Catering, Carl Ball; Decor, Paul Bennett and Ken Atchley; Reception, Joan Jaynes; Music, "Hermie" Gloria; Site Arrangement, Leland Goularte; and Invitations, Vicki Deiwert.

## Ballots Counted

The ballots have been counted and according to a report from the ARA (Ames Recreation Association) the Ames Store may soon be a reality. The vote was two-to-one in favor of establishing such a facility. More details will be forthcoming at a future date.

## HFF Letters Commend Two Retirees

Robert Sanchez and John W. Irwin retired from the Machine Branch this week with the best wishes of many of their fellow workers. They were especially pleased with a letter of commendation presented to each of them by members of the Hypersonic Free-Flight Branch.

The letter, signed by the staff commended them on "your excellence in creating intricate small-scale models of aircraft and spacecraft (and sabots) from drawings that were not always the best. This made possible the launching of models from guns at extremely high speeds and we were able to obtain data not available by other means."

## Special Discounts Offered to Personnel at Ames

Membership cards, mail order discount coupons, and other special offers are available without charge for all Ames employees, tenant organizations at the Center, and retired Ames employees. Contact The Astrogram Office, Room 134, Administration Management Building.

### DISCOUNT CARDS

DISNEYLAND: Magic Kingdom Club cards for special benefits at Disneyland.

FRONTIER VILLAGE: Frontier Wonderland Club Cards for special benefits at Frontier Village.

SANTA CRUZ BEACH and BOARDWALK: Beachcomber Club cards for a 30 percent discount.

SEA WORLD: Ames employees can now receive reduced rate tickets to Sea World, on Mission Bay, San Diego, through Sea World's Dolphin Club plan.

## Frontier Village Special

Frontier Village is offering a special discount for the July 4th weekend. Admission and unlimited rides are offered for \$2.50 with the presentation of a Frontier Wonderland Club card. Membership cards are available free in the Astrogram Office.

AMES RESEARCH CENTER FAMILY NIGHT  
at

SANTA CRUZ BEACH AND BOARDWALK

FRIDAY NIGHT JULY 24, 1970

7:00 p.m. to 11 p.m.

Ride All Night Long on All Attractions, for Only  
\$ 2.50 per person

Exchange this Coupon with \$2.50 per person for  
Special Ticket at the Main Ticket Booth near the  
Merry-Go-Round.

We want \_\_\_\_\_ tickets @ \$2.50 each: \$ \_\_\_\_\_

Good Only  
Friday Night, July 24, 1970

## Training Announcements

SPECIAL SEMINAR SERIES - Held in conjunction with the Stanford-Ames Summer Faculty Fellowship Program, Ames Auditorium, 3:30 p.m.

Thursday, July 9: Dr. Cyril Ponnampetuma, "The Chemical Basis of Extraterrestrial Life."

Thursday, July 16: Dr. Michael Arbib, "The Evolution of Intelligence and the Role of Self-Reproducing Machines."

STANFORD-AEROSPACE TECHNOLOGY AA298

Wednesday, July 8: Professor Arthur L. Schawlow, Chairman, Department of Physics, "Contemporary Lasers and Their applications."

Wednesday, July 15: Irwin Hersey, Editor, Space/Aeronautics "Technological Spin-off From Space."

## Credit Union

The Moffett Field Employee's Credit Union is now able to offer membership to contractor employees who work at Ames Research Center. This decision came after many discussions and several meetings with the Credit Union Supervisory Authority and was approved with the proviso that the following conditions be met:

- Employed continuously with the same contractor for a period of at least nine months;

- Contract employee cannot be eligible for membership in a credit union composed of employees of the contractor;

- Where applicable, payroll deduction for the Moffett Field Employees Credit Union will be made by the employer for the contract employee.

The Credit Union is located in Building 107 NAS Moffett Field, telephone number 966-5494.

## "Thank You" Notes

"I wish to take this opportunity to thank all of my friends for the nice gifts and flowers received at my retirement luncheon. I will think of you every time I use the waffle iron and the beautiful purse. I am so very proud of my album, which will always remind me of the many pleasant associations I have had at Ames.

I especially enjoyed seeing so many of my friends at the luncheon and reception. My sincere thanks to each of you.

Mrs. Edna L. Meacham  
Property Management"

"The retirement luncheon and the cocktail party will always remain with me as a very special memory. Thanks again to each of you most sincerely,

Mary Schmidt"



PARAMOUNT PICTURES PRESENTS

Julie Andrews Rock Hudson  
in

## DARLING LILI

NOW SHOWING

NASA - AMES RESEARCH CENTER

GROUP SALES MAIL ORDER

Make checks or money order payable to CENTURY THEATRES and mail to SPECIAL EVENTS, 3164 Olsen Drive, San Jose, Calif. 95117

Please send me \_\_\_\_\_ tickets at \$ 2.40

Date, JULY 26 Time of performance 8 p.m.

My check for \_\_\_\_\_ is enclosed.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Please enclose remittance and a stamped self-addressed envelope. All ticket requests must reach theatre seven days prior to show date, and tickets will be mailed soon after.



## SUMMER BOWLING

... by Dennis Riddle

The standings of the All-Ames Summer Bowling League as of June 16th:

TEAM	WON	LOST
Dirty Rugs	16	8
Stars	15	9
Vikings	14	10
Number Ones	13	11
Bowl'n Bums	7	17
Raiders	7	17

The week of the 16th saw some nice games and series bowled: George Falkenthal, 232/565; Hank Cole, 206/571; Howard Garrison, 205; Al Silva, 528.

The women were right in the "ole pocket" also: Judy Long, 208/515; Ann Teshima 183/492; B.J. Carle, 173/436.

Sorry that I do not have the June 23 standings, but would like to mention that Hank Cole was doing great: 245, 213, 191/649. Nice bowling, Hank.

## FAST-PITCH SOFTBALL

The Ames Fastpitch Softball team exploded for 11 hits and beat the Hewlitt Packard Warriors by a score of 8 to 4. Ames is presently tied for first place in the Mountain View League.

	Box Score		
	Pos.	AB	R
Steve Kanally	LF	3	2
George Alger	3B	2	1
Reuben Martell	SS	4	2
Roger Hedlund	CF	3	0
Bob Bell	C	3	0
Bruce Ganzler	2B	3	1
Jim Myers	1B	3	1
Roland Duenas	RF	3	1
Bob Corbett	P	2	0
		26	8

## JOUGGERNAUTS

... by Jim Woodruff

Ted Passeau ran the first annual Golden Gate Marathon in three hours and fifty six minutes. Ted was very enthusiastic about the scenic course, from Tiburon, around to Sausalito, over the Waldo grade, across the Golden Gate Bridge, and finishing at the Marina. We are more impressed that Ted could run 26 miles, 385 yards and still enjoy the scenery.

Paul Sebesta and Jim Woodruff ran the Seventeen Mile Drive race in 49:49 and 56:24, respectively. In a 17.1 mile race, Bruce Castle ran in 1:56:30 and Vic D'Aloia in 2:06:10.

## HABITAT

(Continued from Page 1)

the Virgin Islands, Departments of Navy and HEW, Smithsonian Institute, U.S. Coast Guard, and G.E.

## Ames Airings

... by Jeanne Richardson

ART GOBETS (Hypersonic Aerodynamics) and his wife, Ursula, just returned from an exciting tour of Holland, Austria and Germany. They arrived at the Amsterdam Airport on April 28, and were met by an old college friend. He told them that Amsterdam, in 1000 W.D. was a little fishing village on the river Amstel. The Gobets visited the Ryksmuseum (Federal Museum of the Netherlands) during their visit in the city. There they saw paintings by Rembrandt, including the Nightwatch, Vermeer, Gabriel and Peiter de Hoogh.

From Amsterdam, they went to Vienna, via the Vienna Express, a 17-hour trip. On arrival, they were met by Mr. Gobets' brother and family. The brothers had not seen each other for 22 years, and Mr. Gobets met his four nephews and nieces for the first time.

His brother, who is a portrait painter, lives with his family near the Vienna Woods. Naturally, the Gobets' were given a grand tour, including Schloss Mayerling.

After five days the Gobets were off to Munchen, where Mr. Gobets tried to reach Franz Hindelong, a former NASA exchange scientist, who worked in the Ames Physics Branch. Next was Stuttgart, where Mr. Gobets met with Professor Wortmann of the University of Stuttgart. For two days they discussed the low turbulence windtunnel Professor Wortmann built.

After Stuttgart they visited Aldingen and Freiburg. In Freiburg they visited another former exchange scientist, Wolfgang Uerzkirch. Wolfgang worked in Ames' Hypersonic Aerodynamics Branch five years ago. Leaving Freiburg, they made their way to Hanover. There they found the German language less "violated" than in Bavaria, Serabia or the Black Forest, but the people less than friendly. So, they were soon off to West Berlin.

Mrs. Gobets had left Berlin in 1949, so it was quite a reunion, with friends, relatives and the city itself. She found that things had changed in many ways. The Gobets included a visit to "the Wall" during their stay.

After a gala farewell dinner in Amsterdam, they flew home to the U.S.A. Mr. Gobets claims it took a week for his Circadian Rhythms to readjust, even though he didn't realize he had them till just recently.

DON ADAMS, Army Aeronautical Research Branch, joined forty other

Sierra Club members in a trip down the Colorado river on rafts, recently. Two rafts, equipped with a boatman, power motor and twenty Sierra members each, navigated 310 miles of the Colorado. They went over 100 different rapids, 12 of which were treacherous. Going over some of the more difficult rapids, people were thrown from the raft. Those thrown off had to "float" down past the rapids and were picked up in quieter waters.

Beginning at Lee's Ferry, the group traveled for ten days before reaching their destination, Lake Mead. The group spent their nights camping out on the beach, and part of the days hiking into the wilderness along the sides of the river. They also explored some of the many tributaries along the way.

BETTY RUPP, Special Projects, and TED BROWN, Research Facilities Engineering, took off on a little different kind of adventure on May 30. They were married at the Latter-Day Saints Church in Willow Glen. The wedding was followed by a reception at Betty's parents home and a honeymoon in Hawaii. Mr. and Mrs. Brown spent five days on Oahu at Waikiki Beach. They tried surfing and sailing, toured Pearl Harbour, C.&H. Sugar, Dole Pineapple, and visited the Latter-Day Saints Temple. The Polynesian Cultural Center in Lai was the high point of their stay on Oahu. Ted said he found Waikiki similar to Coney Island. Both he and Betty enjoyed the flower island of Kauai the best. It was less commercialized and more secluded than Oahu.

They spent the last two days on the big island of Hawaii, where they toured the island and its volcanoes. Welcome home Mr. and Mrs. Brown.

Apologies are extended to Mrs. LORETTA VICE, Technical Information. In the last Ames Airings the announcement of the birth of her son was made without mention of her. For those of you who have been wondering, it was Loretta who gave birth, not her husband (who, to make up for the last issue, is not being mentioned this time.)

The Division secretaries of Aeronautics and Flight Mechanics Directorate met for a luncheon in honor of HELEN SCHONER who retired at the end of June. The luncheon was held at Sakura Gardens on Wednesday, June 17 in one of the private rooms where the girls sat "Japanese fashion" on pillows placed on the floor.

The group presented Helen with a tote bag which she said will be

## WANT ADS

The Astrogram's ad section is provided as a personal, non-commercial service to Ames employees. Advertiser must be identified by name, extension and organization. The name may be left out of the ad but is needed for records. Ads must be submitted in writing to The Astrogram, N-241-4, by Thursday, a week before publication. The advertiser's home telephone number must be provided as a point of contact except in carpool notices.

### AUTOMOTIVE

For Sale-1962 Porsche 1600S Roadster, \$1800 or best offer. Call 326-7906 evenings.

For Sale-1963 Chevll, 6 cyl auto, radio, heater, good transportation car. 356-9695, \$295.

For Sale-1963 Rambler custom 4-door, one owner beautiful condition, R.&H., new engine, R. Linebarger, 264-3459.

For Sale- Minitrail bike (Honda 50) \$150 or best offer. Excellent condition, good tire "69" model. Minitrail bike (Trail Bonanza) \$65, or best offer. Good tires and runs well, 3 1/2 hp Clinton, 656-5262.

For Sale-1961 Ford Stationwagon, V8, manual transmission, original owner, 64,000 miles, \$350 call F. Thompson, 379-2385.

For Sale-1968 Camaro, SS350, 4-speed, convertible, call 245-3396.

For Sale-1966 Fairlane 500, A/T P/S, radio, new tires, low mileage. \$1050. Call after 6 p.m. 987-4953.

For Sale-Bonanza motor bike, Honda 90cc engine with compression release, \$265. Frank Thompson 379-2385.

### HOUSING

For Rent-Tahoe City, vacation cabin, 2-bedroom furnished, walk to beach or marina, \$90 per week, \$40 per 2-day weekend. Call 328-4642.

For Rent-High Sierra Lake mountain cabin, call 243-7377 after 5 p.m.

### MISCELLANEOUS

Ride Wanted-Needed for the summer, 8 to 4:30 shift, to Walnut Creek area. Please call Robin Gray ext. 2573, home phone 934-1195.

For Sale-Hotpoint double oven and counter top range, electric, avocado green. New units, never used. \$295 Phone 797-7414.

For Sale-Used Electric Stove, 24x24", oven broiler, thermo, \$15. Call 354-4736.

Sears best-\$49.95 2-speed- evaporative auto Air Cooler, adjustable air flow, ice reservoir. Excellent condition. Will sell for half price, \$25 Phone 968-4155.

For Sale-Dyna 50 watt monaural amplifier, excellent condition, \$50. One-fourth interest in new folding starcraft camp trailer, sleeps six complete, \$400. Call 733-2870.

Transportation needed- Summer employed college student needs transportation between Ames and Atherton-Menlo Park Area. 8 to 4:30, will pay gas expenses, etc. Call Louis Fielder, Ext. 3152.

For Rent- Beach House, ocean view, close to beach, 217 Rio Del Mar Blvd. Cooper, 867-3335.

Free-Adorable black and tan kitten, nine weeks old and box trained. 948-0777.

For Sale-GE TV Table model new picture tube, runs well, \$35 356-9695.

Wanted-Furnished house or apartment during the month of August for visiting professor and wife. Call Leo Poppoff, Ext. 2721.

Car Pool- seeks driver; Cambrian area, San Jose. 8 to 4:30 shift. Call Joe Astaifa, ext. 2823.

Ride Wanted-from 1900 Old Middlefield Way, Mtn. View, near Bayshore. Only for summer. Call Steve Bangs, 961-1111, ext. 3041 or 967-2376, 7:30 to 4 shift.

H.D.-EZ Lift Trailer hitch, \$75, Helmsman seat, \$25 gas tanks, Johnson used, \$12.50, Homelite new \$17.50, Boat steering Assy, \$15. Model Sail-boat kit "Dumas" \$35. R.D. McCann 378-4439.

For Sale-10 pure blooded German Shepherds, 6 weeks old, take your pick, \$25 each or 2 for \$40. Also, apricots, 10 cents a pound, 90 cents a pound for dried, bring your own container. Call Joe Quartuccio, at 274-0728.

For Sale-Cement Mixer, with 1/2 H.P. electric motor, \$85. Call F. Thompson, 379-2385.

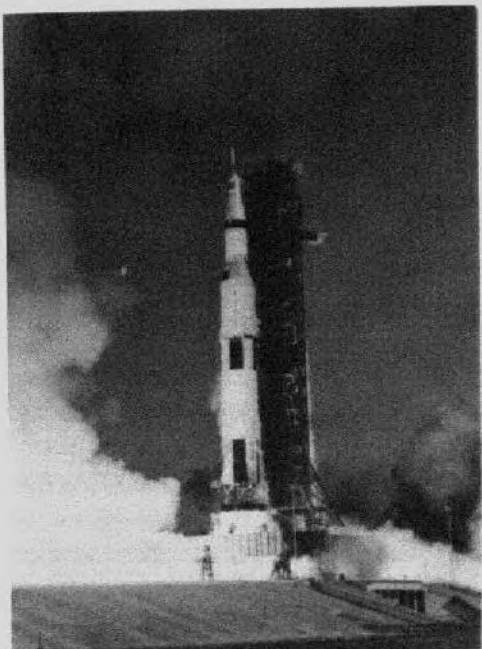
very useful on the bus tours she is planning to take this summer.





National Aeronautics and Space Administration • Ames Research Center, Moffett Field, California

## A SALUTE TO THE FIRST ANNIVERSARY OF APOLO 11 MOON LANDING



"Houston, Tranquillity Base here, the Eagle has landed." With this message the waiting world knew that Astronauts Neil A. Armstrong and Edwin "Buzz" Aldrin, Jr. aboard the lunar module had touched down on the Moon. The time was 1:17 p.m. PDT, July 20, a year ago. The first anniversary of this historical event is at hand and celebrations are planned nationwide.



The Apollo 11, with commander Neil Armstrong, command module pilot Michael Collins and lunar module pilot "Buzz" Aldrin, was launched at 6:32 a.m. PDT, July 16, from Kennedy Space Center's Launch Complex 39-A, aboard a Saturn V launch vehicle. Splashdown was 9:50:35 a.m. PDT, July 24, 920 miles southwest of Hawaii and 210 miles southwest of Johnston Island. President Nixon was aboard the recovery ship to watch the splashdown and to congratulate the crew by intercommunication.

At precisely 7:56 p.m. PDT of

July 20, Astronaut Armstrong placed his left foot on the surface of the Moon and spoke the now-famous words, "That's one small step for a man, one giant step for mankind."

Eighteen minutes later Astronaut Aldrin joined Armstrong on the lunar surface and together they read the plaque which remains as a permanent artifact on the Moon. The inscription, which symbolizes the nature of the journey, reads: "Here Men From the Planet Earth First Set Foot Upon the Moon, July 1969, A.D. We Came in Peace for All Mankind." The plaque bears the signature of President Nixon, and the three Apollo 11 crew members.

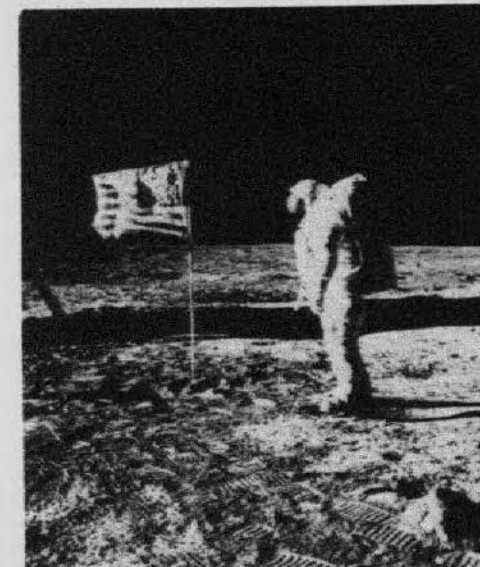
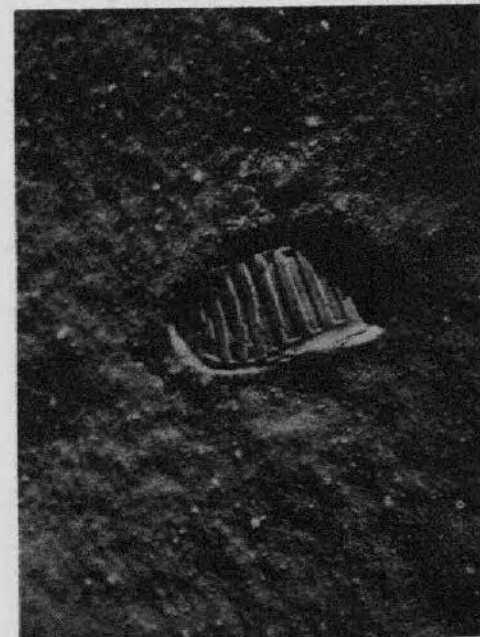
In 195 hours, 18 minutes and 35 seconds, Apollo 11 and Astronauts Armstrong, Aldrin and Collins moved the world into a new era.

The completion of the Apollo mission met the national objective of a lunar landing and safe return to Earth before the end of the decade set by President Kennedy in 1961. And President Nixon said, "This is the greatest week in the history of the world."

### WORLD-WIDE INTEREST

Interest in the Apollo 11 was intense and world wide. The heads of 74 nations sent messages of goodwill which were reduced 200 times by a microdot process. They were fitted on a silicon disc about the size of a silver dollar which was left on the Moon. On the personal side, a Peruvian mother named her baby, born during the flight, after Neil Armstrong.

There were many records and firsts established by the Apollo 11 mission. From the largest payload ever in lunar orbit to the longest long-distance telephone call in man's history which originated in the White House and was relayed to the lunar module crew on the Moon. It was the healthiest flight. None of the crew had to resort to the medical kit for any reason. All phases of the lunar touchdown, the Moonwalk, and the ascent to 50,000 feet were "firsts." More than 3000 newsmen from 55 countries beside the U.S. were on hand to report the event. Japanese news media were represented by a press corps of more than 100 correspondents. Comsat

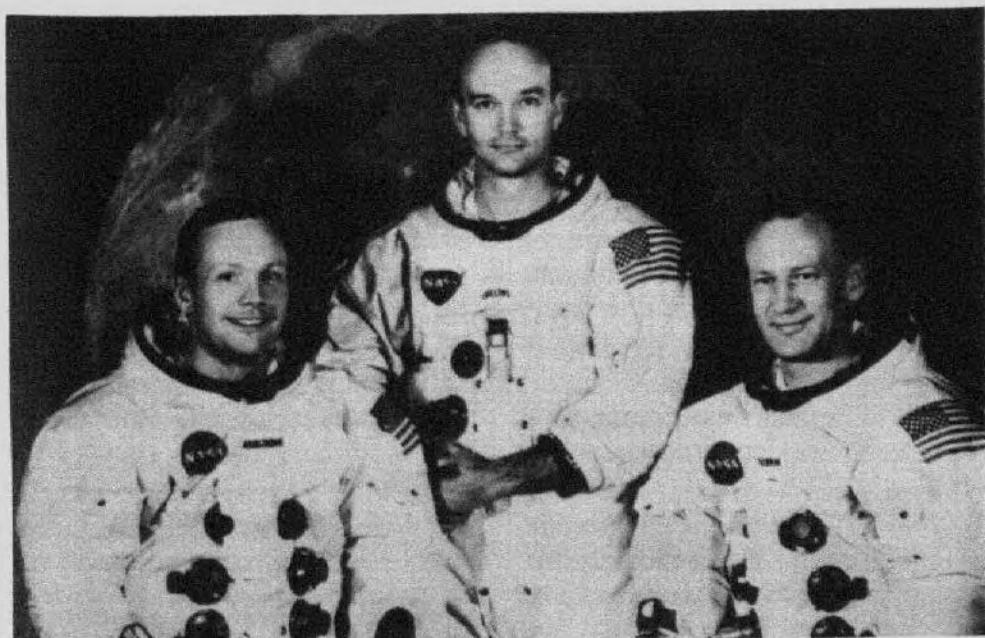


estimated viewers totaled 500 million.

Like any great scientific achievement the manned lunar landing is improving the quality of life on Earth. Study of soil brought back from the Moon is helping unravel the secrets of the universe and may even provide a better insight into the true origin of life.

The Apollo 11 crew undoubtedly has been seen in person by more people throughout the world than any other three men who have lived on Earth. As a team and individually, they have appeared before millions during more than 100 public appearances during the past year.

On this first anniversary of the Apollo 11 moon landing, where are the principals now? Armstrong is NASA Deputy Associate Administrator for Aeronautics, Collins is Assistant Secretary of State for Public Affairs, and Aldrin is on flight duty at the Manned Spacecraft Center in Houston . . . . . Happy anniversary to the Apollo crew!



**APOLLO 11 REMEMBERED . . . . .** The prime crew of the Apollo 11 lunar landing mission, July 1969. Left to right are Neil A. Armstrong, commander; Michael Collins, command module pilot; and Edwin E. Aldrin, Jr., Lunar module pilot.



Editor's Note: This is the first in a series of articles which will explain the various work-study programs, both scientific and technical, in progress at the Center.

## De Anza Work-Study Program Begun at Ames

... by Jeanne Richardson

Twenty-five De Anza College students began the first phase of a joint vocational work engagement program at Ames when they reported for work on July 6. They are working full-time, training as machine tool technicians and metal fabrication technicians, during the summer months. In September they will begin attending classes at De Anza, while working half-day schedules at Ames. Some of these classes will be taught by Ames personnel at De Anza. The program is administered by the Ames Training Office.

### STUDENTS

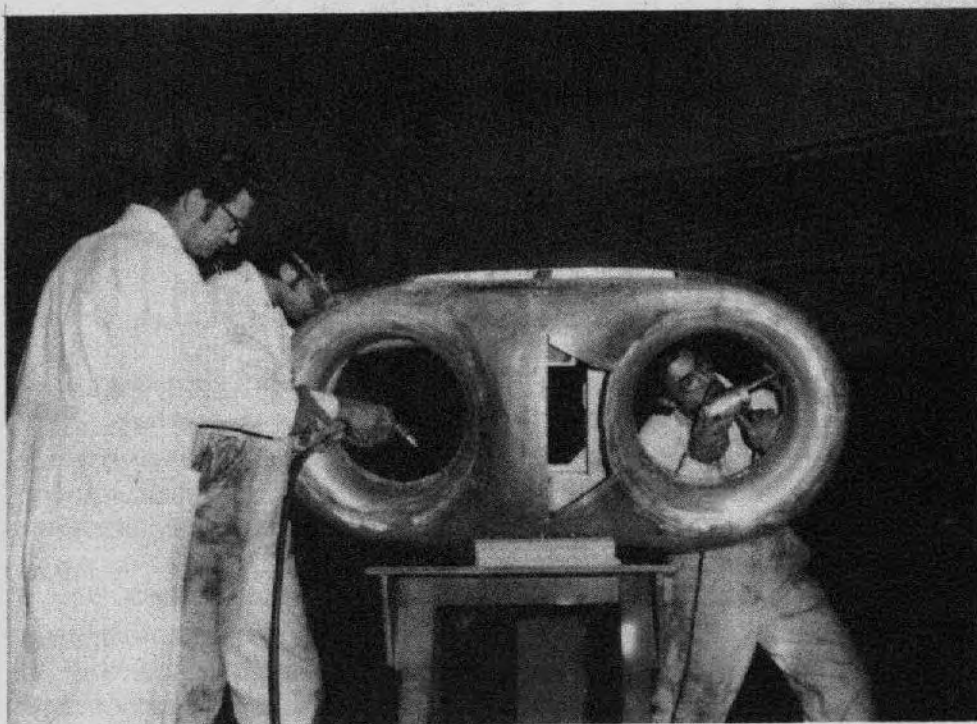
The students were recruited from Redwood City to San Jose, and represent fourteen different high schools. At the end of four successive academic years of combined classwork and work experience they will receive an Associate in Science Degree. This will qualify them as fully trained technicians in their fields. The two curriculums offered this year are Machine Tool Technology and Metals Fabrication Technology.

The courses at De Anza will include the California requirements for an Associate in Science degree and such related courses as metalurgy, drafting, blueprint reading and tooling. With the successful completion of these courses and the training at Ames, the student workers will be machinists and metal fabricators with an opportunity to go into advanced model making and building.

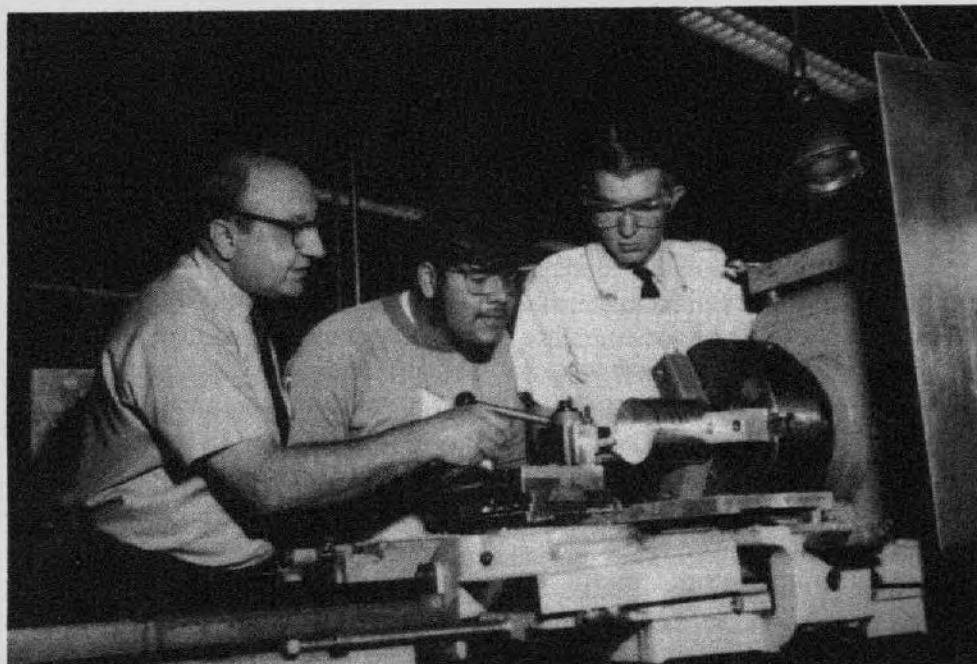
### TECHNICIANS

Ames Research Center, as well as outside industries, has a continuing need for such technicians. With the normal retirement and transfer turn-over rate, a number of fully-trained technicians is needed each year. Thus, Ames will not only be providing a training opportunity for students, but an accessible work force for the Center. Although there are no guarantees to the students of employment at Ames, the Center will hire as many of the graduates as possible.

Since the program covers four successive academic years, the students will be employed in the



FUTURE TECHNICIANS . . . . . Jake Cruz (right) and John Cordova (center) work with Journeyman, Glen De Witt in the Metals Fabrication Branch on the modification of engine inlets of the X-14-A aircraft. Upon the successful completion of this four-year program, the twelve De Anza technician trainees will be fully-trained metal fabrication technicians.



DE ANZA TRAINEES . . . . . Robert Osborne (right) and John Torres (center), with Foreman, Thomas H. Tassi are pictured working on their first assignment, machining the diameter of an aluminum and magnesium laminated cylinder. Robert and John are two of the thirteen trainees beginning a four year training program in the Machine Branch.

## New Lightweight Space Suits Sought

Fashions for astronauts! Well--not quite. But space suits for U.S. astronauts are about to change styles.

NASA has asked industry to develop a lightweight space suit, weighing only about 12 pounds, and

Machine Branch and the Metals Fabrication Branch continuously for those years. Each summer a new group of students will begin the program, and will continue in their respective branch for four successive years.

comfortable enough to be worn full-time during future space flights. Current pressure suits are bulky and restrict movement even when unpressurized.

The new suit would include a collapsible helmet for quick pressurization in emergency.

The suit is to be durable enough to withstand pre flight training and testing and missions lasting up to one year with daily donning and doffing. And it is to be designed so a crewman can put it on without assistance, hook up the spacecraft oxygen system, and pressurize the suit within two minutes.

## AMES COMPUTER CONTRACT LET

NASA has selected the Computer Sciences Corporation in Los Altos for final negotiation of a contract to maintain, operate and perform selected modification of the computer facilities for the simulation laboratories at Ames. The requirement includes programming and various engineering support functions.

The value of the cost-plus-award fee contract is estimated at \$3.3 million.

The cost for the first year is estimated at \$1 million. Total estimated cost including options is about \$3.3 million.

The period of performance is for one year with options to continue the services for two additional one-year periods.

Computer Sciences was selected from among five companies who submitted proposals for this work.

The contractor will be required to provide personnel and materials at the Ames Center, necessary to support operation of the computers for the simulation laboratory. The simulation laboratory supports Ames research scientists in a variety of disciplines who utilize simulation in their research activities.

## Apollo 12 Pictures

A new NASA picture set containing eight full color and two black and white pictures of the Apollo 12 Moon landing is now available. The set includes several spectacular "firsts" in pictures: Surveyor III visited by an astronaut from "home"; the Sun being eclipsed by Earth; an unexplained "mound" on the lunar surface. Each of the lithographs is printed on high quality 11" x 14" paper, suitable for framing.

For information and order forms, contact "The Astrogram" office, APR-241-4, ext. 2385, or the Public Affairs Office, DI-200-12, ext. 2671. A full set of the pictures is on display in either office.

**THE ASTROGRAM** Room 134  
Admin. Mgt. Building  
Phone 2385

The Astrogram is an official publication of the Ames Research Center, National Aeronautics and Space Administration, Moffett Field, California, and is published bi-weekly in the interest of Ames employees.

Editor . . . . . Dot Evans  
Reporters . . . . . NASA Employees

Deadline for contributions:  
Thursday between publication dates



## Personnel Corner NASA Space Ecology Survey Publication

### TRIAL RETIREMENT

Employees who are eligible for optional Civil Service retirement often express serious concern over their ability to make the financial and personal adjustments which retirement may require them to make. Trial retirement programs have been established in some Federal agencies, including NASA, in order to allow these employees to have experience in retirement with an assurance that they will be able to return to work at the same salary at the end of one year if they wish to do so. Federal employees who have participated in the trial retirement program have obtained valuable experience; and most of them have found on the basis of this experience, that they were able to retire permanently.

Any employee who is eligible for optional retirement under the Civil Service Retirement System may apply for participation in the trial retirement program. Those not eligible for trial retirement are; employees who are eligible for disability, discontinued service, or mandatory Civil Service retirement; reemployed annuitants; those who retire after notification that they are under investigation or after receiving notice that disciplinary action is being considered.

A description of procedures for requesting and approving trial retirement at Ames may be found in the NASA-Ames Management Manual, 3831-1 and 2 respectively, dated June 24, 1970. An employee who wishes to exercise his reemployment rights must notify the Ames Personnel Officer in writing. This must be done not later than the first workday of the eleventh month after the date of his separation for retirement.

The returning retiree will be reemployed in a position for which he is qualified at the same grade and salary step that he held prior to retirement, with two exceptions. First, when provided for in the trial retirement agreement, he may be reemployed at any grade and salary which does not exceed his former grade and salary; and second, no retiree will be reemployed above the GS-15 level or equivalent.

## Theatre Offer

Tickets are still available at the Century 24 theatre for the July 26 8 p.m. showing of "Darling Lili" for \$2.40. The discount coupon, which must be mailed with the remittance and a stamped self-addressed envelope, is in the last issue of "The Astrogram."

Based on technical reports by a number of earth scientists, some of the possible scientific uses of spacecraft in the 1970's are outlined in "Ecological Surveys from Space," a new NASA publication.

The 75-page soft-bound book suggests a few of the possible uses for surveys from spacecraft in seven important disciplines of natural science: geography, agriculture, forestry, geology, hydrology, oceanography and cartography.

It is intended to call the attention of more specialists in these disciplines to the potentialities of ecological surveys from orbiting satellites, the whole world's surface can be surveyed in a variety of ways, as often as necessary, to help meet increased demands on the Earth's resources.

Both the advantages and disadvantages of remote sensing of various features of the Earth's surfaces are expected to become clearer in 1972 when NASA's first Earth Resources Technology Satellite (ERTS) is placed in orbit.

The new book, NASA SP-230, contains 38 color photos as well as black and white pictures taken from aircraft and the Gemini and Apollo vehicles. It may be purchased for \$1.75 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

## SPECIAL NOTICE

The Public Affairs Office, NASA Headquarters, is interested in doing a roundup of NASA people or their spouses who are serving or seeking public office, elective or appointive. For details call the Ames Public Affairs Office, ext. 2671.

## VACANCY NOTICES

### Merit Promotion

Position	Grade	Location	Area of Consideration
Secretary (Steno.)	GS-6	Vehicle Environment Division	Center-wide
Supervisory, Aerospace Engineering Technician	GS-10/11	Structural Dynamics Branch	Directorate-wide
Supervisory, Physical Science Technician	GS-10/11	Materials Research Branch	Directorate-wide
Supervisory Aerospace Engineering Technician (Amended)	GS-10/11	Magnetoplasma-dynamics Branch	Directorate-wide

Further details of these opportunities are available at extension 2021.

## Training Announcements

**SPECIAL SEMINAR SERIES**-Held in conjunction with the Stanford-Ames Summer Faculty Fellowship Program, Ames Auditorium, 3:30 p.m.

Thursday, July 23: Dr. John McCarthy, Professor of Computer Science, Stanford University "Artificial Intelligence: Possible Forms of Intelligence in the Universe."

Monday, July 27: Dr. Ronald N. Bracewell, Director, Radio Astronomy Institute, Stanford University, "Interstellar Messenger Probes."

Thursday, July 30: Dr. Frank Drake, Associate Director, Center for Radiophysics and Space Research, Cornell University "Methods of Communication; Message Content; Search Strategy; Interstellar Travel"

All lectures will be held in the Main Auditorium at 3:30 pm. **STANFORD-AEROSPACE TECHNOLOGY SEMINAR-AA298**

Wednesday, July 22: Harold Masursky, Chief, Branch of Astrogeologic Studies, U.S. Geological Survey, Flagstaff, Arizona, "Apollo Contributions to Lunar Geology"

Wednesday, July 29: Donald G. Germeraad, Manager and Chief Test Engineer, Space Shuttle Program, Lockheed Missiles and Space Company, "Impact of Aerospace Technology on Future Ocean Systems."

**SPECIAL ONE-DAY WORKSHOPS**-Held in conjunction with the Stanford-Ames Summer Faculty Fellowship Program:

Thursday, July 23: Dr. Arthur Bryson, "Control Theory," 9 a.m. to 3 p.m., Building 233, Room 227.

Monday, August 3: Dr. Holt Ashley, "Aeroelasticity," 9 a.m. to 3 p.m., Building 241, Room 147/149.

Thursday, August 6: Dr. Milton Van Dyke, "Analytical Methods in Fluid Mechanics," 9 a.m. to 3 p.m., Building 233, Room 227.

Names of attendees should be submitted to the Training Office through the branch.

## ARA Beach Night

The ARA sponsored Ames Family Night at Santa Cruz beach and boardwalk is Friday, July 24, from 7 p.m. to 11 p.m. A special ticket enabling one to ride on all attractions will be available at the Boardwalk for \$2.50 and the coupon printed in the July 2 "Astrogram."

## FLYING CLUB

"Mac" Megenity, manager, and Les Baker, office manager, of the Air Force Club, Building 75 on Moffett Field, would like to extend an invitation to all Ames employees to join their flying club. Due to a recent change in a Department of Defense regulation, Ames personnel can now be admitted into the Air Force Club.

Aside from other benefits, the club owns three Cessna 150's, one Cessna 172 and two Navyions. There is an initial membership fee of \$25 and a monthly fee of \$10. Those interested may call either "Mac" or Les at 739-4510, ext. 2584, from 8:30 a.m. to 2:30 p.m.

## TRAVEL CLUB

Anyone interested in joining an Ames Travel Club, please contact ARA members; Jeanne Clemson, ext. 2003 or Janet Konrath, ext. 2009.

## SKI CLUB

Preparations are being made for an Ames ski club. Anyone interested in this winter sport should contact Jeanne Richardson at ext. 2973.





STUDENT PILOT . . . . SUE NORMAN (Mission Analysis Division) is pictured with her instructor receiving her Aircraft Owners and Pilots Association (AOPA) Solo Flight Certificate. She said it took her 20 hours in the sky and about six weeks to arrive at this stage of her pilot's career. From here Sue will go on to learn such necessary subjects as navigation and instrument control.

## Ames Airings

. . . . Jeanne Richardson

CAL EDDLEMAN (RFEEB) and DEAN N. JAYNES (Measurement Sciences) spent ten days and 225 miles navigating the Colorado river on a raft, not too long ago. They traveled with a group of China Lake personnel, organized by Dr. Richard Roberts. Dr. Roberts, now employed by China Lake, was previously with Ames in the Measurement Sciences Branch.

Wild burros, big horn sheep, rattlesnakes, hawks and a wild turkey were among the observers of the group, whenever they hiked inland. However, sidetrips were not a prerequisite for being observed by the natives. On one of the hairier rapids two large vultures watched patiently as the raft ran into some trouble. After being swirled completely around on two previous rapids, the guide had decided to prepare the group for this next large rapid, called "Upset." The plans were to move down the middle, past the first two waves and drive hard to the right, missing a large hole. Instead, the raft veered to the left of the rapid, getting partially caught in the hole. On another rapid, the raft was bounced off the canyon wall, and turned sideways. In this precarious position the group could feel the large boulders, lying on the bottom of the river scrape the underside of the raft. Despite the mishaps and the vultures, however, Cal and Dean had a great time.

## FAST-PITCH SOFTBALL

. . . by Bruce Ganzler

The Ames Fastpitch Softball Team started the second half of play in the Mountain View League by scoring an 8 to 7 win over the Hewlitt Packard Cubs. The big blow of the game was a grand slam home run by George Alger. Ames took second place in the nine team league for the first half of play.

	Pos.	AB	R	H
B. Holmes	1B	4	1	2
B. Ganzler	2B	4	1	3
G. Alger	SS	4	1	2
B. Bell	C	2	1	1
R. Hedlund	CF	4	1	0
S. Vice	LF	3	1	1
J. Myers	3B	3	0	1
R. Duenas	RF	3	0	1
R. Wicker	RF	0	0	0
B. Corbett	P	2	1	0
		29	8	11

## SUMMER BOWLING

. . . by Dennis Riddle

The standings of the All-Ames Summer Bowling League as of July 7:

	WON	LOST
Dirty Rugs	25 1/2	10 1/2
Vikings	22	14
Number Ones	19	17
Stars	18 1/2	17 1/2
Raiders	12	24
Bowl'n Bums	11	25

The men were not up to their usual games, but there were still some nice games and series bowled: Hank Cole, 187-185-181/553; Pete Paquette, 512; George Falkenthal,

## GOLF

. . . by Kay Bruck

Forty-five golfers made up of Ames members and their guests teed off at Spring Hills Golf Course in Watsonville on July 3. The day was hot, the course was at least challenging and the scores were high.

Jim Nelan, Chairman of this special holiday tournament, reported that the players were placed in two flights - handicap and Calloway. The winners in the handicap flight were:

First place, Ben Beam; second place tie, Bob Sheaffer, F. Thomas, Bill Page; fifth place tie, John Hawkins and Don Dust.

The winners of the Calloway flight were:

First place, Mrs. Jim Silver; second place, Mrs. Ron Denison; third place, Mrs. Fred Carpenter.

Bert Nevotti, our bearded friend, set a new course record taking a 17 on the third hole. This cost Bert the tournament. His consolation prize was one draft beer (donated by a friend).

The next regular tournament is at Aptos Beach on July 25.

## SOFTBALL

. . . by Grantland Wheat

The Fighting Pumas took the first half title by downing a tenacious Instrumental team 3 to 1 on June 24. Although the I's committed no errors and gave up only 6 hits, the Pumas bunched 4 of these hits to score all their runs in the sixth inning. Steve Kanally's two-run double was the decisive blow.

But the Mighty I's bounced back with a vengeance, knocking off Aero 9-7 and TGD 5-3 to start the second half of the season. In other games TGD slipped by Space Science on July 1 by a score of 10-9; then July 7 the Spacemen again came up losers, this time to Aero, by 13 to 3. Second half standings as of July 10 are:

	W	L	Pct.
Instrumentals	2	0	1.000
Aero	1	1	.500
TGD	1	1	.500
Fightings Pumas*	0	0	.000
RFE	0	0	.000
Space Science	0	2	.000

\*First half champions, Congratulations Fighting Pumas

507: Howard Garrison, 210; and Larry Powell, 182.

The women must have been stealing the strikes from the men: Jan Konrath, 196/527; Judy Long 466; Ann Teshima, 186/465; and Jeanne Clemson, 179.

## WANT ADS

The Astrogram's ad section is provided as a personal, non-commercial service to Ames employees. Advertiser must be identified by name, extension and organization. The name may be left out of the ad but is needed for records. Ads must be submitted in writing to The Astrogram, N-241-4, by Thursday, a week before publication. The advertiser's home telephone number must be provided as a point of contact except in carpool notices.

### AUTOMOBILES

For Sale-1964 Ford Falcon two door sedan, radio and automatic transmission, \$500. V. F. Dosch, Apt. 186, 2235 California Avenue, Mountain View, California.

For Sale-1969 Monitor Travel Trailer, 18 ft. sleeps 6, shower, toilet, vanity, hot water system gas/electric refrigerator, automatic furnace, CLEANER THAN NEW! \$2700, 948-4269.

For Sale-1961 Classic Rambler, 4-door Sedan, Good Condition, \$125 Call 323-1180.

### TRANSPORTATION

Summer employed college student needs transportation between Ames and Portola Valley area, beginning July 27, 8 to 4:30. Call Jackie Kolb, ext. 2488 or 851-0361, evenings.

Ride Wanted daily between Ames and El Camino at Hollenbeck, Sunnyvale; 8 to 4:30 shift. Call Margaret Hines, ext. 2278.

Ride Needed, summer only, from Ames to Palo-Alto area, (Stanford Terrace). Can provide ride to Ames in A.M., 8 to 4:30 shift. Charlie Benn ext. 2991 or 327-4930.

Transportation needed, summer employed college student needs transportation for the month of August, So. 12th St. (near San Jose State), 8 to 4:30, Call Debra Sherman, ext. 2208.

### HOUSING

For Rent-South end of Fremont (half hour to Ames) huge yard with cattle country over back fence, unfurnished 2-story, 3-bedroom, 2 1/2 bath, family room, etc. (1600 sq. feet), swim club membership \$275 per month, first and last months rent and cleaning deposit required on 1 year lease. Available August 15. Call Roger Craig, 657-0549.

For Rent-Sunnyside area of Tahoe, vacation cottage, 2-bedroom, walk to beach or marina, \$90 per week, \$40 per weekend. Call 328-4642.

### MISCELLANEOUS

Wanted-Small, 2-wheeled, utility trailer. Call Roger Craig, 657-0549.

For Sale-Folding Bed, roll-a-way, twin bed, box spring and mattress. Adding machine, not electric hand vacuum cleaner, and marble table top. Call 295-4582.

For Sale-Golf Clubs: H & B registered irons, true temper dynamic shafts #2 through #9, plus putter, \$30. Spaulding "Top Flight" irons. Stainless steel heads, #3 through #9. \$15. Call, Van Etten at 245-2165.

For Sale-12 watt mono H.F. Amplifier, like new Knight-Kit KM-15, \$12, Call 736-3984.

For Sale-Encyclopedia Britannica delux set, latest edition, like new, including bookcase, atlas and year books, \$200, Call 377-1311.

For Sale-Washer and dryer, good condition, \$60 or make offer. Call 269-1972 after 5 p.m.

For Sale- Pedigree (AKC registration) male Labrador retriever, 15 months old. \$150, Call Don Kornreich, 268-8618.





# the astrogram

VOLUME XII  
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July 30, 1970

National Aeronautics and Space Administration • Ames Research Center, Moffett Field, California

## NASA Gives Peru Assist in Quake Area

The government of Peru has accepted NASA's offer to send one of its remote sensing aircraft to help assess damage resulting from the recent severe Peruvian earthquake.

The aircraft, stationed at the Manned Spacecraft Center, departed July 11, stopped in Mexico City to pick up two representatives of the Mexican Space Commission's earth resources team experienced in remote sensing and arrived in Lima July 12.

A Lockheed Electra equipped to acquire black and white, color and color infrared photography and thermal infrared imagery, the plane will be used to obtain data over the area in northern Peru which suffered the most severe earthquake damage.

Data acquired during the mission which supplements data already obtained by the Peruvian government will be processed at the Manned Spacecraft Center and furnished as rapidly as possible to Peruvian government authorities for analysis.

Duration of the mission will be from a week to a month depending upon cloud cover conditions. It is expected that the data, in addition

to helping the Peruvian government assess damage and plan reconstruction, will also contribute to the future application of the science of remote sensing to natural disasters.

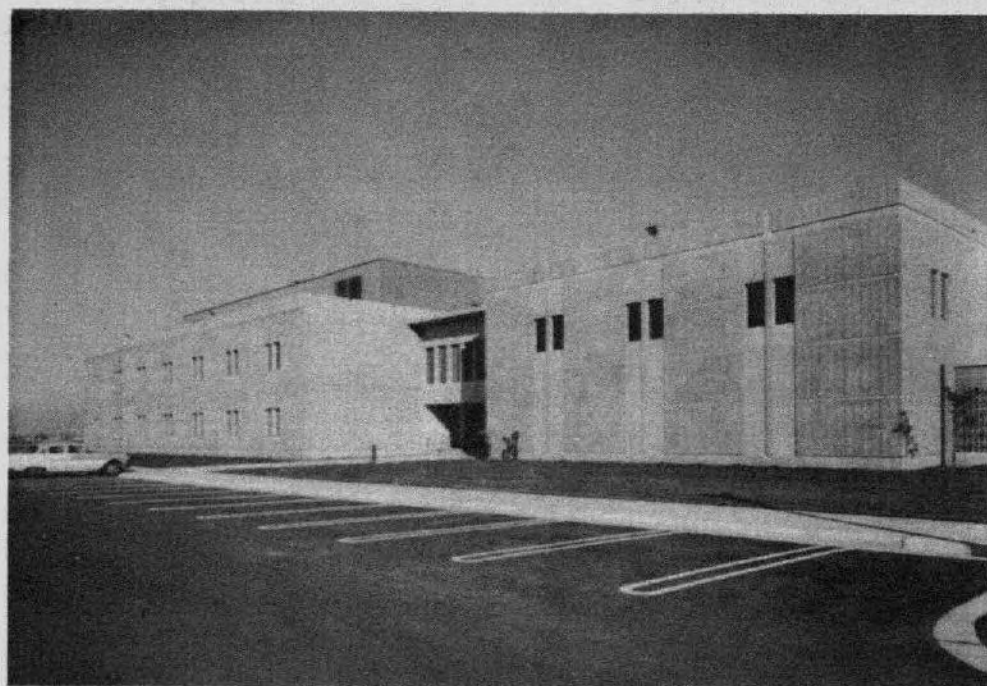
Approximately 30 different flights are scheduled during the next several weeks, along the Pacific coast of Peru as well as the Santa Valley which experienced the heaviest damage.

## Civil Defense Alert July 31

Ames employees are advised by the Santa Clara County Office of Civil Defense that the next regular testing of the Civil Defense alert and warning system occurs at 11 a.m. on Friday, July 31.

### SIGNAL

The test consists of a steady siren tone for one minute, a minute of silence, then a warbling tone or series of short blasts for a minute.



## New Ames Space Science Research Laboratory Opened Last Week

Moving vans were busy last week as members of the Space Sciences Division were gathered from various sites throughout the Center and relocated in the new Space Science Research Laboratory.

Located on the east side of the Center grounds just north of the Systems Engineering Building, construction of the new facility began in January 1969.

The reinforced concrete structure has about 76,000 square feet in two floors, a basement, and an attached high bay. The latter is to be used in part for large laboratory equipment such as the vertical gun for impact cratering studies, the Long-Pass Gas Cell, and a large vacuum chamber with ion beam for plasma instrumentation work.

Except for a small group of research scientists and technicians in the Planetology Branch conducting an experiment which cannot be moved at this time, the remaining 70 members of the Space Science Division, directed by Dr. Charles P. Sonett, have moved to the new Laboratory.

The Space Sciences Division, under the Directorate for Astronautics, conducts research directed toward understanding the Earth's environment, the Earth-Sun relationship, and the nature and origin of the solar system and the universe.

Both laboratory and space flight experiments in the fields of astro-

physics, planetology, planetary atmospheres and interplanetary particles and magnetic fields are conducted at Ames. Successful research is prerequisite to the design of future space vehicles and experiments as well as to basic understanding of the nature and origin of the solar system and the universe.

The Ames project engineer was Gerald E. Peterson, RFE Branch.

### PICTURES WANTED FOR:

## Page from the Past

"The Page from the Past", a summertime feature in "The Astrogram", continues to interest members of the Ames staff - so we have decided to add to our collection and have planned a new series of pictures for a forthcoming issue.

Any recognizable photograph (no baby pictures, please) taken during the period 1940-55 would be appreciated. It can be a picture taken anywhere in the world - employment at Ames during that period is NOT a requirement.

During the past three summers over 225 photographs of Ames employees have appeared in "The Page from the Past" and there is room for many more. Send prints or snapshots to Dot Evans, Editor, "The Astrogram", Mail Stop 241-4. Return is guaranteed.



**TANGIBLE SAVINGS . . .** resulting from a suggested modification to the Gorton Mastermil in the Machine Branch has earned a \$30 cash award for James N. Gabbard (right). His proposal that a trav-a-dial indicator be attached to the Mastermil has greatly increased the capability of the machine. The standard Mastermil can now accommodate work normally found on larger and more costly machines offered by the manufacturer. Mr. Gabbard is pictured explaining the details of the indicator to Apprentice Modelmaker, James M. Peterson (left), operator of the machine.





AMES SUMMER AID COUNSELOR . . . Tom Jones (second from left) is pictured explaining the lunar landing mission to (l to r) Tommie Smith, De Ann Burse and Calvin Chen during an orientation tour. The three students are part of a group of 50 in the Center's Summer Aid program.

## Fifty Summer Aids at Ames Take Part in Nationwide Work-Study Program

. . . by Jeanne Richardson

For the fifth consecutive summer Ames' hallways and labs are being brightened by the young faces of Summer Aids. This year 50 students between the ages of 16 and 20 came from various Bay Area high schools and colleges. They began work on June 15 and will leave to return to school on September 10. Some have come back to Ames for their third summer with this government-wide program, in which all federal agencies participate.

The students were recommended for the program by their school counselors, then screened and hired at the Center. To be eligible the students had to be from 16 to 21 years of age, with family incomes falling within a specified range.

The Aids are employed in a variety of positions which are not only significant and important to them, but also important to their employing agency's mission. Every effort is made to match the Aid's area of employment with his area of interest in school. Thus, whenever possible, the student is given an opportunity to gain work experience in his chosen field. Even when such a match of interests is not possible, the students are provided with productive work-training experiences.

The jobs this summer cover a wide variety of fields and interests. For instance, Gilbert Padilla, who

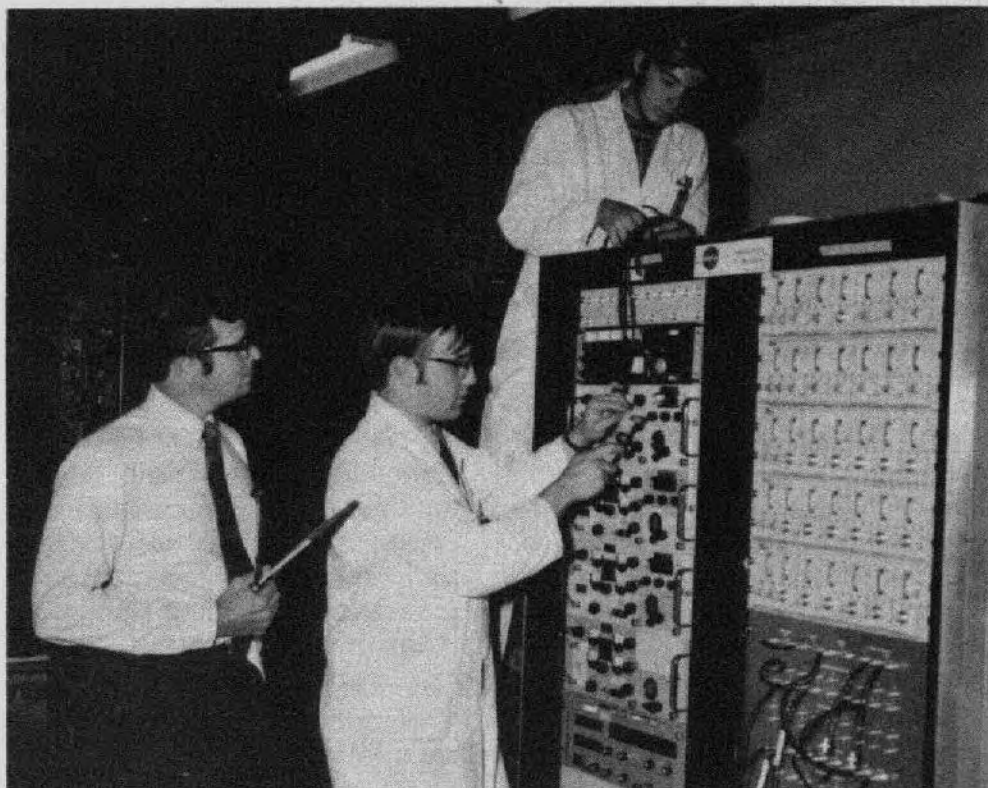
will be attending Yale in the fall under a scholarship, is working on a unique study in the Biomedical Branch with Dr. Edward Crossman. There is a possibility that Mr. Padilla will be writing a dissertation on the study, involving the food intake of birds and rats.

Upstairs from Gilbert, in the Life Detection Systems Branch, another Summer Aid, Susan Fong, is working with Bonnie Berdahl on a back-up project for the Viking Experiment which will be going to Mars in 1975. Susan, a very cheerful girl, will attend the University of California at Santa Cruz in September under a chemistry scholarship.

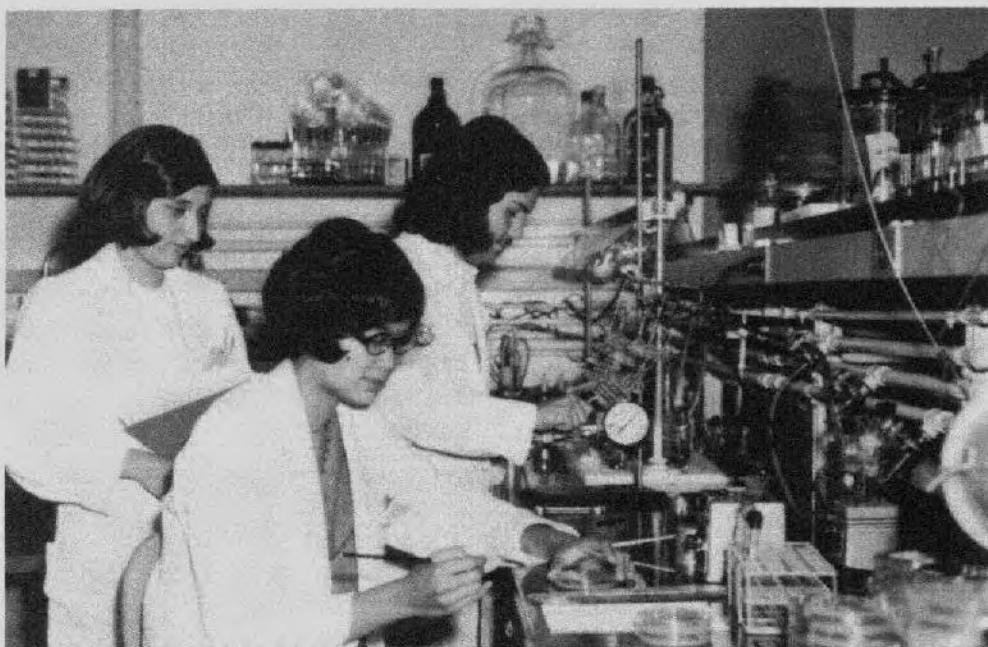
Like Gilbert and Susan, most of the Aids are working in areas that are of interest to them. It is hoped that all the Aids will benefit as much from the work experience this summer as the Center has from their employment.

During an interview with Tom Jones, the Summer Aid counselor at Ames, he stated, "I have 50 students, and they're all great," a feeling that is shared by their supervisors as well. He intends to make counseling a lifetime profession.

A recent graduate of Stanford, Tom will continue his education in the fall at either U.C. Berkeley or Cal. State at Hayward, and hopes eventually to do counseling work in a penal institution.



TELEMETRY GROUND STATION . . . Summer Aids Randall Gillespie (above machine) and Christopher Leidich (center) are pictured here with supervisor Ed Gabris (Vehicle Guidance and Control Branch) working in the Telemetry Ground Station. The Aids are working with receivers, the first stage of communication in the SPARCS soundings payload integration.



STUDENT RESEARCHERS . . . Susan Fong (center) and Gilbert Padilla (right) are working this summer as Summer Aids in the Life Sciences Directorate. Ames Chemist Bonnie Berdahl (left) Life Detection Systems Branch, watches Summer Aids Susan and Gilbert as they concentrate on a back-up project for the 1975 Viking Experiment. Most of the Aids are gaining work experience in their major field of interest before entering college in September.

## BOWLERS WANTED

Time to begin planning for the All-Ames Winter Bowling League! Break out your bowling ball and join us at Moonlite Lanes (Santa Clara) on Tuesdays at 6:30 p.m. The winter league will be starting in September and will continue through April. We want to hear from ALL interested teams and individuals as soon as possible. The league is open to Ames and Ames contractor personnel and their spouses. Call or write Dennis Riddle, League President, at 2241 or 227-2 now!

### Editor's Note:

The above article is the second in a series explaining the various work-study programs now in progress at Ames.

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The Astrogram is an official publication of the Ames Research Center, National Aeronautics and Space Administration, Moffett Field, California, and is published bi-weekly in the interest of Ames employees.

Editor . . . . . Dot Evans  
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Deadline for contributions:  
Thursday between publication dates



## Personnel Corner

### PERSONNEL RECORDS

Ames employees are reminded to keep their personnel records up to date. Make sure that Official Personnel Folders include all experience and training not already contained in previous applications or other records which are filed in the Folder.

You may review your Folder in the Personnel Division's Records and Reports Branch, Room 145. If your Folder is not up to date with regard to experience and training you may prepare a current SF 172 for inclusion in your Folder.

### JOGGERNEWS

Five Joggnauts ran the 9.2 mile road race at Holy City, June 28. Runners and times were: Bruce Castle, 58:56; Paul Sebesta, 62:51; Vic D'Aloia, 65:18; Ted Passeau, 72:15; and Jim Woodruff, 75:24. We supposed any hills would seem small after that run, but the Felton race, also 9.2 miles, on July 12 was steeper. Eight Joggnauts finished this one: Bruce Castle, 65:46; Paul Sebesta, 69:53; Jim McClenahan, 70:02; Vic D'Aloia, 73:00; John Arveson, 75:56; Jim Woodruff 77:29; Ted Passeau, 78:39; and Roger Hedlund 81:24. Three

## ARA Executive Board



MEMBER FRANK LAZZERONI...

Army Aeronautical Research Lab. is recording acoustic noise from rotor blades. Do you have some noise to make about activities you'd like to see organized at Ames? Call Frank, a member of the Ames Recreation Association Executive Board ext. 2991.

of Bob Johnson's sons finished both races. The youngest is six years old.

## Training Announcements

**SPECIAL SEMINAR SERIES** - Held in conjunction with the Stanford-Ames Summer Faculty Fellowship Program, Ames Auditorium, 3:30 p.m.

Thursday, August 20: Dr. Bernard M. Oliver, Vice-President for Research and Development, Hewlett-Packard Company, "Technical Considerations in the Design of a Microwave System for Interstellar Communication"

Thursday, August 27: Dr. Samuel Aronoff, Dean, Graduate School of Arts and Sciences, Boston College, "The Longevity of Civilizations"

Monday, August 31: Dr. Philip Morrison, Professor of Physics Massachusetts Institute of Technology, "Conclusion: Entropy, Life and Communication"

### STANFORD-AEROSPACE TECHNOLOGY SEMINAR-AA298

Wednesday, August 5: Dr. Alfred J. Eggers, Jr. Assistant Administrator, Office of Policy, NASA, Washington, D.C. "NASA Programs for the 70's"

**SPECIAL ONE-DAY WORKSHOPS** - Held in conjunction with the Stanford-Ames Summer Faculty Fellowship Program:

Wednesday, August 14: Topic: Applied Aspects of Adaptation: Sleep, Stress and Desynchronization.

Lecturers: Dr. David Jacobowitz, Assistant Professor, Department of Pharmacology, University of Pennsylvania School of Medicine.

Dr. Jack D. Barchas, Assistant Professor, Department of Psychiatry, Stanford University School of Medicine.

Dr. Joan Vernikos Danellis, Research Scientist, Physiology Branch, Ames Research Center, NASA.

Dr. Charles M. Winget, Research Scientist, Physiology Branch, Ames Research Center, NASA.

TIMES: 10:00 a.m. to 12:00 noon and 2:00 to 4:00 p.m.

Names of attendees should be submitted to the Training Office through the branch.

### Special:

## For Working Couples

Notice 186 (6-70)

### How to claim your withholding Exemptions

If annual wage of spouse with smaller wage is —  
Over | Not over

\$ 0	\$ 850
850	1,625
1,625	2,275
2,275	2,925
2,925	3,575
3,575	4,225
4,225	

If both husband and wife work, the withholding system has never been geared to withhold the full amount of tax on their combined income. This difficulty is now aggravated by the new low income allowance. There is no practical way for the withholding system to properly reflect the low income allowance when both husband and wife work. Instead, the withholding system gives each employee one low income allowance even though a married couple is allowed only one low income allowance when they file their return. This means that they may owe a large and unexpected tax at the end of the year to make up the difference between their withholding and their actual tax.

Working couples can minimize the possibility of a year-end balance due by claiming withholding exemptions in accordance with the following

### Couple Entitled to:

2 Exemptions	3 Exemptions	4 Exemptions	5 Exemptions	6 Exemptions	7 Exemptions
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If Combined Wages are over the following — claim exemptions as Shown:

\$2,350		\$3,000		\$3,650		\$4,300		\$4,950		\$5,600	
Spouse with smaller wage	Spouse with larger wage	Spouse with smaller wage	Spouse with larger wage	Spouse with smaller wage	Spouse with larger wage	Spouse with smaller wage	Spouse with larger wage	Spouse with smaller wage	Spouse with larger wage	Spouse with smaller wage	Spouse with larger wage
0	1	0	2	0	3	0	4	0	5	0	6
1	0	1	1	1	2	1	3	1	4	1	5
2	0	2	0	2	1	2	2	2	3	2	4
3	0	3	0	3	0	3	1	3	2	3	3
4	0	4	0	4	0	4	0	4	1	4	2
5	0	5	0	5	0	5	0	5	0	5	1
6	0	6	0	6	0	6	0	6	0	6	0

8 Exemptions	9 Exemptions	10 Exemptions	11 Exemptions	12 or more Exemptions
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If Combined Wages are over the following — claim exemptions as Shown:

\$6,250		\$6,850		\$7,500		\$8,150		\$9,000	
Spouse with smaller wage	Spouse with larger wage	Spouse with smaller wage	Spouse with larger wage	Spouse with smaller wage	Spouse with larger wage	Spouse with smaller wage	Spouse with larger wage	Spouse with smaller wage	Spouse with larger wage
0	7	0	8	0	9	0	10	0	11
1	6	1	7	1	8	1	9	1	10
2	5	2	6	2	7	2	8	2	9
3	4	3	5	3	6	3	7	3	8
4	3	4	4	4	5	4	6	4	7
5	2	5	3	5	4	5	5	5	6
6	1	6	2	6	3	6	4	6	5
7	0	7	1	7	2	7	3	7	4
8	0	8	0	8	1	8	2	8	3
9	0	9	0	9	0	9	1	9	2
10	0	10	0	10	0	10	0	10	1
11	0	11	0	11	0	11	0	11	0

If you have other questions about your income tax, call your local Internal Revenue office. They will be glad to help you.

Department of the Treasury  
Internal Revenue Service  
Notice 186 (6-70)

## New Low - Income Allowances—1969 Tax Reform Act

The Tax Reform Act of 1969 establishes a new low-income allowance which is available to married couple only when a joint income tax return is filed. The withholding system gives each employee the low-income allowance because it would have created serious complications for employers if different treatment had been provided for employees whose spouses work and those who do not. The result is that if both husband and wife work, not enough tax is withheld, and at the end of the year the couple may face a large tax bill to make up the difference between the withholding and actual income tax.

The chart reprinted here shows taxpayers (when both husband and wife earn wages) how best to allocate withholding exemptions to claim on their Forms W-4 and avoid too little tax being withheld.



# Ames Airings

... by Jeanne Richardson



## TONY QUARTUCCIO

Artists at work and exhibits of their paintings were featured last week at an art show at South Lake Tahoe. A front page photograph in the "Tahoe Daily Tribune" showing the artists at work caught TONY QUARTUCCIO (Planetology Br.) in the foreground with a display of his fine oil paintings which depict scenes around the Lake. Tony likes to vacation there because of the art show and the many scenic areas which are an artist's delight.

BEN BEAM (Instrumentation) and his wife, Helen, just returned from a wonderful trip to the Hawaiian Islands. They visited Maui, Kauai, the big island of Hawaii, and Oahu. Ben seems to have picked up quite a bit of the geological history of the islands during the tour. He and Helen played golf on Kauai, the oldest of the islands. Because it is the oldest there is less evidence of the volcanic activity that caused its formation. Ben said it was lush green, and the most naturally beautiful of the islands. They played golf on a total of five of the Hawaiian courses and came back with beautiful tans. One of the courses they played was on the "big island" of Hawaii. This, Ben said, was the youngest most recently formed island. There is an abundance of hardened lava, evidence of past volcanic eruptions, as well as a semi-active volcano.

Ben said they didn't spend much time on Oahu. However, they did take a stroll through the International Market Place in Waikiki. While there they had the typical Hawaiian snack (What else?) Pizza and beer.

The ole stork has been so busy around Ames lately, the poor bird is reported to be in the big hangar getting a wing job. Massey, Data Service personnel have been particularly demanding of her flight time. Four beautiful baby boys were born to happy parents this month. Kenneth

## FAST-PITCH SOFTBALL

... by Bruce Ganzler

The Ames Fastpitch Softball dropped a 6 to 2 ballgame to the Mountain View Apaches to even their record to 1 and 1 for the second half of play. Mike Green had a triple in the losing effort.

### BOX SCORE

	Pos	AB	R	H
B. Holmes	1B	1	0	0
S. Vice	RF	1	0	0
E. Lampkin	RF	0	0	0
M. Green	LF	3	1	2
G. Alger	SS	2	1	0
R. Hedlund	CF	2	0	0
B. Ganzler	2B	2	0	1
B. Bell	C	2	0	0
J. Myers	3B	2	0	0
B. Corbett	P	1	0	0
		16	2	3

## SUMMER BOWLING

... by Dennis Riddle

The standings of the All-Ames Summer Bowling League as of July 21:

TEAM	WON	LOST
Dirty Rugs	31 1/2	12 1/2
Stars	23 1/2	20 1/2
Number Ones	23	21
Vikings	22	22
Bowl'n Bums	17	27
Raiders	15	29

The last two weeks some of the men have been making up for lost time! A few of the games and series have been: Dennis Riddle, 250/574; Bill Gilwee, 235/543; Frank Cleary, 227/573; Howard Garrison, 212; Hank Cole, 203/533; and Pete Paquette, 528. Sorry about that, ladies. It must have been the men's turn to get the strikes.

## TRAVEL CLUB

Anyone interested in joining an Ames Travel Club, please contact ARA members; Jeanne Clemson, ext. 2003 or Janet Konrath, ext. 2009.

Michael Sliter, 8lbs. 5oz., was born to Mike and Beth on July 11; Garret Charles Neier, 7lbs. 4oz., was born to Danny and Karen on July 21; Kenneth Ryan Glynn, 7lbs. 9oz. was born to Martin and LaVonne on July 22 and James Joseph Franklin Remington, 6lbs 13 1/2 oz., was born to James and Sandra Remington on July 22.

PAUL SCHARMEN (Materials Processing Branch) and his wife, Sharon are the proud parents of a new daughter, 2 month old, Jill Marita. She was adopted into their family and joins her two adopted brothers, John and Christopher.

Congratulations to all of the new parents!

## GOLF

... by Kay Bruck

The Aptos Tournament held last Saturday turned out 60 golfers. There were three flights for this partner tournament as reported by Sal Tardio and Don Humphry, co-chairmen. The winners in these flights were:

First flight-Debbie Debevoise and Jim Rountree, first place; John Mulkern and Ed Stepnoski, second place; and Jack Lee and Roy Griffin, third place.

Second flight- John Hawkins and George Falkenthal, first place; Larry Hochstein and Bob Eddy, second place; and Ruth Richardson and Ben Tyson, third place.

Third flight-Bill Page and Ed Tischler, first place; Vance Oyama and Tom Polek, second place; and Dave Sinott and Clark White, third place.

The closest-to-the-pin prize was captured by Chuck Turnbull.

As a reminder to our members, the chairmen are responsible for the type of tournament to be run and for the prizes to be given.

The next regular tournament will be at Sunol (Palm) on August 8.

## SKI CLUB

Preparations are being made for an Ames ski club. Anyone interested in this winter sport should contact Jeanne Richardson at ext. 2973.

## SOFTBALL

... by Grantland Wheat

The Fighting Pumas blew an eight-run lead in the seventh inning, but rallied to defeat Aero 16-14 in an extra inning on July 14. Roger Hedlund's fifth hit - a two-run homer - was the winning blow. The Pumas didn't have to fight so hard for their next victory, however, accepting a forfeit from RFE.

TGD had no such luck - RFE showed up and pounded the Gas-house Gang 19 to 8 on July 15. Then just to be mean, TGD turned around and broke the Aeros 8-5 on July 21. George Alger homered for TGD.

July 23 the Instrumentals beat the under-staffed Spacemen by 21-5, as several Space Science regulars were called to higher duty at the new Space Science building dedication.

Second half standings through July 24 are:

	W	L	GB
Instrumentals	3	0	--
Fighting Pumas *	2	0	1/2
TGD	2	2	1 1/2
RFE	1	1	1 1/2
AERO	1	3	2 1/2
Space Science	0	3	3

\*FIRST-HALF CHAMPIONS

## WANT ADS

The Astrogram's ad section is provided as a personal, non-commercial service to Ames employees. Advertiser must be identified by name, extension and organization. The name may be left out of the ad but is needed for records. Ads must be submitted in writing to The Astrogram, N-241-4, by Thursday, a week before publication. The advertiser's home telephone number must be provided as a point of contact except in carpool notices.

### AUTOMOBILES

For Sale-1963 Chev. II 6 cyl., auto., radio, heater, \$295, call 356-9695

For Sale-1963 Chev. Impala, 4-door, hard top, 327 engine. AT-PS-R&H, FGood Condition, \$500, call 251-6479.

For Sale-1963 Chevrolet Impala 2-door hardtop, R & H power steering, automatic transmission, good condition, \$500, call Ross Benn, 253-4597

For Sale-1963 Chevy II 6 cylinder, automatic trans. 2-door sedan. \$330, or best offer, call Kunita at 325-2791, after 5 p.m.

For Sale-1964 Chev. carry all. Auto transmission, postraction \$950, Call 378-8970.

For Sale-1964 Corvair, one owner, convertible, 4-speed, radio, great shape. \$490. Call 941-2784.

For Sale- 1963 Ford Fairlane, 6 cyl. auto trans. one owner, conscientiously maintained, very clean, economical, reliable, reliable, and safe. \$350. Phone 225-3865.

For Sale-1965 V.W. in good condition, \$600, phone 967-9479, after 7 p.m.

For Sale-1968 TR-4A, IRS, w/overdrive, radio & heater, BRG, Blk Leather interior, Tonneau & Boot, \$2,000, call Gene DeGabin 368-4888.

For Sale-Chevelle, 1966 Malibu 327, convertible, Hurst 4 speed, power steering and brakes, \$1200. Phone 243-1623 after 6 p.m.

### HOUSING

For Rent- Vacation cottage, Sunnyside area of Tahoe, 2-bedroom, walk to beach or marina, \$90 per week, \$40 per weekend. Call 328-4642.

For Rent- Ames Employee needs room four nights per week, Mon. through Thur., beginning about Aug. 1. Contact Howard Savage, Rt. 2, Box 414 Sonoma, California, 95370. Phone 209- 332-5686.

For Rent- Lake front cabin, 3-bedrooms, 2-baths, available Aug. 29, through September. Phone 269-8156.

### MISCELLANEOUS

For Sale-2 ea-15" chrome reverse rims, w/baby moon caps. For Chev., \$30 call 356-9695.

For Sale-Baldwin Organ, 45C2, 2 channel amp., 50 watts, full console, walnut, Blue Book \$950, firm, 248-9442.

For Sale-Sofa with slip cover, \$35, 3 cushion, 6 ft. originally custom made, plain lines, uph in plain beige texture, slip cover in rose-beige corduroy. Also Magnavox TV \$35, Swedish modern, floor model Black and White, call after 4 p.m., 323-1180.

For Sale-Dried Apricots. Call 243-7750 or 296-1601 after 5 p.m.

For Sale-Sears 10 gallon aquarium with stand and accessories \$20. 272-0878.

For Sale-Aluminum Awning for Mobile Home or patio ( panel fab ) 10' x 30' embossed with fluted posts and augers. Call 243-9252.

For Sale-Sailboat, El Toro with sail, fiber glass over plywood \$150, 736-5530 evenings.

For Sale-Guinea Pigs, Peruvian, 2 male, 3 month old, long hair \$3, call 964-3258.

For Sale- Infant seat, baby buggy, baby car seat, automobile bottle warmer. All for \$5, call 245-6441.

NOTE: Anyone interested in the winter sport of skiing is welcome to join the now forming ski club at Ames. You need not be an experienced skier to join, an interest in the sport is all that is necessary. For information call Jeanne Richardson, ext. 2973.

For Sale- Boat, ski or fishing, 16 ft. fiberglass, seats 8, 60 h.p., O/B, excellent trailer and tires, two sets of skis, anchor, spare prop, and ropes, Coast Guard rated, new fire extinguisher. Extra 5 gal. gas container. All for \$750, call 322-7824.

## "Thank You" Note

I would like to thank the staff of Ames Research Center for their gift to the American Cancer Society in memory of my father, Hubert E. Foutty. Sincerely, Kitty Foutty, Main Library."